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HOUSEKEEPERS' CHAT Tuesday, April 20, 1937

(FOR BROADCAST USE ONLY)

Subject: "VACUUM CLEANING QUESTIONS." Information from the Office of Experiment Stations, U. S. Department of Agriculture.

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Perhaps the traditional spring urge for housecleaning accounts for all the questions about vacuum cleaners that have been coming in lately. Listeners have been asking advice about buying cleaners and about using them.

As you know, your Aunt Sammy is not much on giving advice. But she is always glad to pass along any general information or report the findings of scientists in the course of their research. As it happens, workers at the Washington State Experiment Station have lately been investigating vacuum cleaning -- from the housewife's point of view.

One questioner asks about different vacuum cleaners on the market, wants to know "how each works," as she expresses it, "and which does the best cleaning."

Though many makes of vacuum cleaners are now for sale, they all belong to one of 3 types. They are either straight suction machines, or brush-and-suction machines, or beater-brush-and-suction machines.

As for the way they "work" -- well, straight suction-cleaning is simply pulling air through the rug and carrying the dirt along with it into the nozzle of the cleaner, through the fan chamber, and finally into the bag. A brush in the machine helps loosen the surface dirt so that it will be more easily carried off by the suction. Finally, the machine that combines suction with a rotary brush and a beating device beats the rug, thus loosening gritty dirt embedded deep in the pile and bringing it nearer the surface where the suction and the brush can remove it more easily.

How good a cleaning job a machine does depends on several things. With a straight suction-machine or with a suction-and-brush machine efficient cleaning depends a great deal on the amount of suction power it has. In general, straight suction machines have a higher suction power than the average brush-and-suction cleaner. But cleaning efficiency also depends on the speed of the motor, the size and shape of the nozzle, and the size and shape of the fan-chamber. In a brush-and-suction machine the kind of brush, too, is important for efficient cleaning. Bristles that are too soft do not lift the dirt; those that are too stiff may be hard on the rug. The machines that beat and brush and use suction beside, rank very high for their efficiency in removing dirt.

This matter of thorough dirt removal brings up another question. A listener writes: "I am considering buying a vacuum machine that has the reputation of being a very thorough cleaner. But when I empty the dust-bag, I notice that it contains not only dust but also a good deal of lint from the rug. I wonder whether it will wear out my rug in time. I have heard somewhere that vacuum cleaning is hard on rugs."

Miss Evelyn Roberts, who last year made the study of vacuum cleaning at the Washington State Experiment Station, found that the amount of nap removed depended somewhat on the type of rug and somewhat on the cleaner. She says that the wool of Axminster rugs broke a little more readily than the wool of the other rugs she tested, and that a straight suction-cleaner picked up the largest amount of small nap and two suction-and-brush machines picked up the next largest amount of nap. But she doesn't blame the cleaner for this broken nap. She found the wearing action of a vacuum cleaner on a rug very small compared to the wear from actual use.

Miss Roberts explains that in the process of manufacturing a rug -- in cutting the loops, or in shearing or trimming the surface with sharp knives to give it an even surface, a good deal of loose nap will be buried in the rug. Then, when the new rug gets its first cleaning at home, much loose wool will appear in the bag and naturally scare the housewife into thinking that her cleaner is hard on the rug. But this shedding is a characteristic of a new rug, particularly one of the velvet type. In Miss Roberts' laboratory tests, she found 4 to 6 times as much nap in the cleaning bag during the first month of cleaning a new rug as she did afterward. The test she made of wear in cleaning showed that the loss in weight from cleaning by vacuum was almost negligible.

Several prospective buyers have asked about choosing different kinds of cleaners for different kinds of rugs.

Miss Roberts tested 9 electric vacuum cleaners on 3 popular types of rugs -- Axminster, velvet, and Wilton. She found these 3 rugs very similar in cleaning characteristics. In other words, a cleaner that does a good job on one kind of rug can be expected to do it on other kinds.

"Which kind of cleaner does the fastest work?" asks another listener. Miss Roberts found machines of the suction-and-brush type faster cleaners than the straight suction machines. In cleaning a 9 by 12 rug she found that the brush-and-suction machines removed about 84 percent of the dirt in 20 minutes but that more time -- possibly 30 to 40 minutes -- was necessary for cleaning the same rug when a straight suction cleaner was used. Another interesting cleaning point brought out in this study was that more dirt was removed during the first part of the cleaning period than during later cleaning.

"How fast should you move the cleaner over a rug for best results?" In the Washington study more dirt was removed when the cleaner was operated at a speed of 1 and a quarter feet per second than at a higher speed.

Last question: "Does the cleanness of the bag have much effect on the way the machine cleans?" Says Miss Roberts: "The cleanness of the inner surface of the bag is one of the most important factors for effective vacuum cleaning." She advises emptying the bag after use each time and at least once or twice a month giving it a thorough brushing, inside and out. (But of course you know that no vacuum bag should ever be washed.)

Last question: "How much does it cost to own and operate a vacuum cleaner?" Answer: That depends on the electric rates in your community, on the wattage of your machine, on how much you use it, and on how much you paid for your machine. Miss Roberts states that operation costs are very low for all machines. If the wattage of your cleaner happens to be 490, say, and your electric rate is 3 cents per kilowatt-hour, and if you use the cleaner an hour a week, the cost of running it will be not quite 10 cents a month. Miss Roberts figures that the cost of both owning and operating a cleaner of average price (about $51) would be approximately 12 cents a week.

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